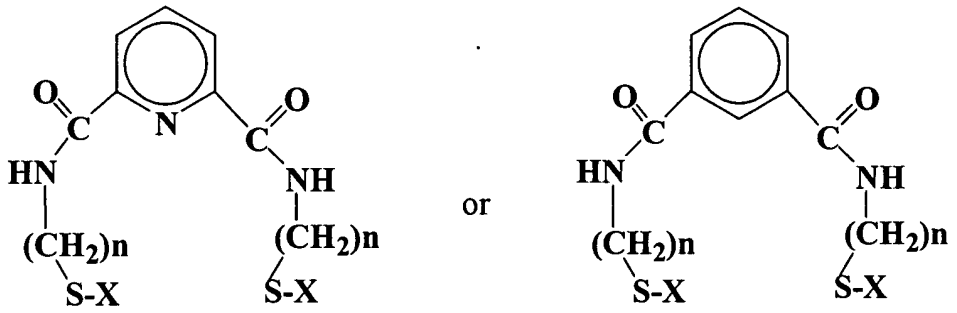
What is Claimed is:

1. A method of preventing leaching of metal from a metal-containing solid substrate, comprising the steps of:

coating the substrate with an effective amount of a solution of a chelate ligand having a chemical formula:



where n = 1-4 and X is selected from the group consisting of hydrogen, lithium, sodium, potassium, rubidium, cesium, and francium; and

allowing the chelate ligand solution to dry.

2. The method of claim 1, wherein the chelate ligand solution contains ligand in an amount of from about 0.01 M to about 1.0 M.

3. The method of claim 1, wherein the metal in the metal-containing solid substrate may be any metal in or capable of being placed in a positive oxidation state.

4. The method of claim 3, wherein the metal in the metal-

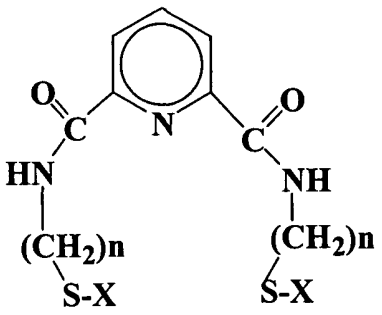
containing solid substrate is selected from a group consisting of lead, copper, mercury, cadmium, iron, nickel, zinc, aluminum, antimony, arsenic, barium, beryllium, chromium, cobalt, magnesium, manganese, selenium, silver, strontium, thallium, tin, gold, vanadium and mixtures thereof.

5. The method of claim 1, wherein leaching of the metal in the metal-containing solid substrate is prevented at pH values from about 0 to about 14.

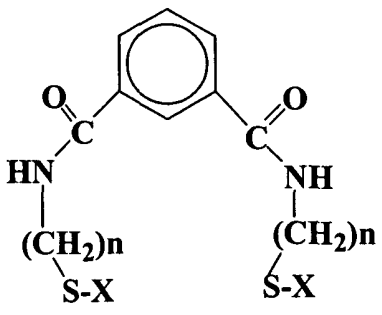
6. The method of claim 1, wherein the solid substrate is coated with the chelate ligand by immersion, by spraying, by painting, or by misting.

7. A method of preventing leaching of metal from a metal-containing coal substrate, comprising the steps of:

coating the coal with an effective amount of a solution of a chelate ligand having a chemical formula:



or



where n = 1-4 and X is selected from the group consisting of hydrogen, lithium, sodium, potassium, rubidium, cesium, and francium; and

allowing the chelate ligand solution to dry.

8. The method of claim 7, wherein the chelate ligand solution contains ligand in an amount of from about 0.01 M to about 1.0 M.

9. The method of claim 7, wherein the metal in the metal-containing coal may be any metal in or capable of being placed in a positive oxidation state.

10. The method of claim 9, wherein the metal in the metal-containing coal is selected from a group consisting of lead, copper, mercury, cadmium, iron, nickel, zinc, aluminum, antimony, arsenic, barium, beryllium, chromium, cobalt, magnesium, manganese, selenium, silver, strontium, thallium, tin, gold, vanadium and mixtures thereof.

11. The method of claim 7, wherein leaching of the metal in the metal-containing coal is prevented at pH values from about 0 to about 14.

12. The method of claim 7, wherein the coal is coated with the chelate ligand by immersion, by spraying, or by misting.